Perception of a hectic hospital environment at admission relates to acute stress disorder symptoms in myocardial infarction patients

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Abstract: Objective Hospital crowding is a public health problem that may impact on the quality of medical treatment and increase the risk of developing traumatic stress, e.g., after myocardial infarction (MI). This study examines whether subjective appraisal of crowding at hospital admission due to MI is associated with acute stress disorder (ASD) symptoms. Method We investigated 102 consecutive patients with acute MI within 48 h after having reached stable circulatory conditions. The appraisal of crowding was measured by the retrospective assessment of the perception of a hectic hospital environment at admission. Furthermore, patients completed the Acute Stress Disorder Scale to rate the psychological stress reaction. Results The perception of a hectic hospital environment was associated with the development of ASD symptoms (r= 0.254, P= .013) independently of demographic, peritraumatic and medical factors. Post hoc analysis revealed associations with dissociative (r= 0.211, P= .041), reexperiencing (r= 0.184, P= .074) and arousal (r= 0.179, P= .083) symptoms. Conclusion The findings suggest that, besides objective circumstances, the way hospital admission due to MI is perceived by the patient may influence the development of MI-triggered ASD symptoms. The psychological and physiological long-term outcomes of the perception of a hectic hospital environment and the role of preventive interventions need further examination.

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Perception of a Hectic Hospital Environment at Admission Relates to Acute Stress Disorder Symptoms in Myocardial Infarction Patients

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ABSTRACT

Objective: Hospital crowding is a public-health problem that may impact on the quality of medical treatment and increase the risk of developing traumatic stress, e.g. after myocardial infarction (MI). This study examines whether subjective appraisal of crowding at hospital admission due to MI is associated with acute stress disorder (ASD) symptoms.

Method: We investigated 102 consecutive patients with acute MI within 48 hours after having reached stable circulatory conditions. The appraisal of crowding was measured by the retrospective assessment of the perception of a hectic hospital environment at admission. Furthermore, patients completed the Acute Stress Disorder Scale (ASDS) to rate the psychological stress reaction.

Results: The perception of a hectic hospital environment was associated with the development of ASD symptoms (r=0.254, p=.013), independently of demographic, peritraumatic, and medical factors. Post-hoc analysis revealed associations with dissociative (r=0.211, p=.041), re-experiencing (r=0.184, p=.074), and arousal (r=0.179, p=.083) symptoms.

Conclusion: The findings suggest that besides objective circumstances, the way hospital admission due to MI is perceived by the patient, may influence the development of MI-triggered ASD symptoms. The psychological and physiological long-term outcomes of the perception of a hectic hospital environment and the role of preventive interventions need further examination. [1]

[1] Abbreviations: ACS = Acute coronary syndrome; ASD = Acute stress disorder; ASDS = Acute Stress Disorder Scale; BMI = Body mass index; CABG = Coronary artery bypass graft; LVEF = Left ventricular ejection fraction; MI = Myocardial infarction; MI-SPRINT = Myocardial Infarction – Stress Prevention Intervention; PTSD = Posttraumatic stress disorder; STEMI = ST-segment elevation myocardial infarction;

KEYWORDS

Acute myocardial infarction; Acute stress disorder; Cardiology; Crowding; Hectic hospital environment; Psychological stress;

1 Introduction

Acute myocardial infarction (MI) is a life-threatening disease, leading to immediate fear and distress in many patients. Between 4% and 18% of patients develop acute stress disorder (ASD) in the aftermath of MI [1, 2]. ASD is a mental disorder that occurs within four weeks after experiencing a traumatic situation. It is characterized by symptoms of dissociation, re-experiencing, avoidance, and hyperarousal [3, 4]. ASD is a risk factor for the development of posttraumatic stress disorder (PTSD), which is associated with impairments in social functioning, quality of life, as well as overall and cardiovascular health [5-8]. The current literature discusses several factors, including female gender and depression, predicting the development of ASD symptoms after MI [9-11]. A consistent finding seems to be that subjective perception of the traumatic situation, but not objective markers of MI severity (e.g. left ventricular ejection fraction or cardiac enzyme levels), are associated with ASD [1, 11, 12].

The medical environment to which patients are exposed may be critical to the development of MI-specific traumatic stress (e.g. mode of transportation, emergency department crowding, time delay to intervention) [13]. Acute MI is a medical emergency that requires immediate professional assistance in a health care institution [14]. The context of hospital referral and process of emergency treatment may influence stress perception of MI patients [15-17]. Especially crowding (i.e. a higher need for emergency services than resources available) has been gaining much attention in this context [18]. Crowding is a public health problem that is

known in many hospitals throughout the world, leading to adverse health-related outcomes, dissatisfaction in patients and caregivers, as well as increasing financial burden on the health care system [19-22].

Moreover, crowding seems to be associated with the development of post-MI stress reactions. Edmondson and colleagues [16] assessed emergency department crowding to which patients were exposed during treatment for acute coronary syndromes (ACS). Crowding was measured by scoring up the hourly emergency department admissions in the 12 hours before and after the presentation of the patient in the emergency department. Higher crowding was associated with higher levels of ACS-induced PTSD after 1 month, independently of demographic variables, ACS-severity, medical factors, and depression [16]. In addition, depressed patients were shown to be particularly susceptible to these stress-inducing effects of crowding [23].

One problem of the research on crowding is the inconsistencies between studies in measuring this construct [19]. To our knowledge, there is no study investigating the association of subjective perception of crowding during hospital admission for ACS and subsequent development of stress.

Therefore, the aim of our study was to investigate whether the subjective awareness of crowding at hospital admission, assessed by the perception of a hectic hospital environment, affects the development of ASD symptoms after acute MI. We hypothesized that patients who, at admission, perceive the hospital environment as hectic would show higher levels of ASD symptoms than those perceiving the hospital environment as calm, while adjusting for demographic, MI-specific, and medical covariates. We further hypothesized that this group difference can be found in each ASD symptom cluster (i.e., dissociation, re-experiencing, avoidance, and arousal).

2 Methods

2.1 Participants and Design

This study is part of an ongoing project Myocardial Infarction – Stress Prevention Intervention (MI-SPRINT) - a clinical trial to test whether psychological counseling shortly after acute MI may reduce the development of posttraumatic stress [24]. The study protocol was formally approved by the ethics committee of the State of Bern, Switzerland. Data for the present analysis were collected between January 2013 and January 2015. Eligible patients referred to the coronary care unit of the Bern University Hospital ("Inselspital") with either acute ST-segment elevation (STEMI) or non-ST-segment elevation (Non-STEMI) were recruited within 48 hours after having reached stable hemodynamic conditions. All participants gave written informed consent to the study protocol. Inclusion criteria were 18 years of age or older, stable circulatory conditions and substantial distress during MI (i.e., those scoring on numeric rating scales, range 0-10, with at least 5 points for chest pain plus at least 5 points for fear of dying and/or helplessness were considered to have perceived the MI as a traumatic event). Specific exclusion criteria were emergency coronary artery bypass graft (CABG), any serious comorbid disease likely to cause death within one year, cognitive impairment or disorientation, a current severe depressive episode, suicidal ideations in the last two weeks, participation in another randomized controlled trial in the Department of Cardiology, and insufficient German language skills.

Within 48 hours after having reached stable hemodynamic conditions, patients underwent a structured interview to retrospectively assess their perception of a hectic hospital environment at admission. In addition, they completed the Acute Stress Disorder Scale (ASDS).

Of 388 patients informed about the MI-SPRINT study, 143 refused to participate, 29 had too low distress levels, and 86 did not participate due to other reasons (e.g. visual impairments,

medical examinations). Of the 130 patients participating in the study, 102 were included in the final analysis. For 28 patients, data on the perception of a hectic versus calm hospital environment, acute stress, or demographic factors were missing due to immediate referral to another hospital, deterioration in health condition, or refusal to be inquired (figure 1).

2.2 Psychometric Assessment

2.2.1 Perception of the hospital environment

We asked patients to retrospectively rate whether they had experienced the hospital environment at admission as "calm", "somewhat hectic" or "fairly hectic" using the following question: "When you arrived at the Inselspital *(where the present study was performed)*, did you find the situation and the environment rather calm or hectic? Was there a lot going on around you?" The question referred to the time interval between hospital entry and getting treatment or being installed in a bedroom, irrespective of the mode of referral (e.g., emergency referral by ambulance, referral from another hospital, walk-in patient). Of the 102 patients, 12% and 4% perceived the hospital environment at admission as somewhat hectic and fairly hectic, respectively. For further analysis, we merged these two categories to one category termed "hectic environment" (16% of all patients) and compared it to a category "calm environment", comprising the 84% of patients who perceived the hospital environment at admission as calm.

2.2.2 Acute Stress Disorder Scale

Symptoms of ASD were assessed with the German version of the Acute Stress Disorder Scale (ASDS) [25, 26]. This 19-item self-rating questionnaire is based on DSM-IV criteria for ASD

[3] and provides the four subscales dissociation (5 items), re-experiencing (4 items), avoidance (4 items), and arousal (6 items). Each item scores on a 5-point Likert scale (0 = "not at all", 4 = "extremely"). Sum scores range between 0 and 76, with higher values indicating more stress. All participants were asked to rate the questionnaire with respect to the cardiac event. An ASDS sum score of 9 or greater for the dissociative symptom cluster in combination with a cumulative score of 28 or greater for the remaining three symptom clusters indicate a DSM-IV diagnosis of ASD with sensitivity of .95 and specificity of .83 [25]. The instrument has been validated in a cardiac sample and showed satisfactory to good internal consistency for the sum score and the subscale scores (Cronbach's α for total scale = .88, dissociation = .89, re-experiencing = .78, avoidance = .62, arousal = .62) [26]. We found comparable reliability in our sample (Cronbach's α for total scale = .83, dissociation = .68, re-experiencing = .66, avoidance = .51, arousal = .70).

2.2.3 Demographic and medical factors (covariates)

Information about age, educational level, medical history, and smoking status were obtained with standardized questions or from medical charts. We asked patients about their weight and height to calculate the body mass index (BMI). MI-triggered peritraumatic distress was retrospectively assessed with three single-item questions asking about the intensity of pain, fear of dying and helplessness to be rated on a numeric scale ranging from 0 to 10. For further analysis, we calculated a sum score of the three items. The three-item scale has previously shown acceptable reliability in a MI sample (Cronbach's α = .76) [7]. The following MI-related variables were abstracted from hospital charts: STEMI/Non-STMI, troponin T peak level, number of diseased vessels with coronary lumen stenosis over 50%, Killip classification, and left ventricular ejection fraction (LVEF).

2.3 Statistical Analysis

Data were analyzed using PASW 21.0 statistical software package (SPSS Inc., Chicago, IL). Significance level was set at $p < .05$ (2-tailed). The Kolmogorov-Smirnoff test was applied to verify normal distribution of dependent variables. ASDS subscales were square-root transformed to reach a normal distribution. For clarity, figures show untransformed values. Missing data were replaced by expectation-maximization algorithm if at least 70% of the corresponding scales were answered [27, 28]. To compare the "hectic environment" with the "calm environment" group of patients on several characteristics, we used Pearson χ^2-test and independent samples *t*-test for categorical and continuous variables, respectively.

We applied linear regression analysis with forced entry of covariates to compute the independent contribution of the perception of a hectic hospital environment to the sum score of ASD symptoms. Covariates were selected a priori based on previous literature on ASD [8-10]. They consisted of sociodemographic (i.e., age, gender, educational level), peritraumatic (i.e., troponin T peak level, peritraumatic distress), and medical variables (i.e., previous MI, history of depression). Further, in order to conduct a post-hoc exploratory analysis, we reran the same regression analysis for each of the four symptom clusters of ASD symptoms.

Assumptions of linearity, homoscedasticity and exclusion of multicollinearity were verified by scatter plots and curve estimations. Durbin Watson statistic assured exclusion of autocorrelation. Results are reported as unstandardized *B* coefficients, standard errors of the mean (SEM) and *p*-values. Effect sizes are expressed as correlation coefficients *r*, with values of 0.1, 0.3, and 0.5 indicating small, medium, and large effects, respectively [29].

3 Results

3.1 Patient characteristics

Table 1 shows the characteristics for all participants and stratified per patient groups having perceived the hospital environment as hectic versus calm. The sample had a mean age of 59 years and was predominantly male (80% men). The hospital environment at admission was perceived as hectic and calm by 16 and 86 patients, respectively, whereby the two groups did not significantly differ in terms of demographic and medical factors. Moreover, patients in the "calm environment" group did not differ from those in the "hectic environment" group in their self-rated distress during the traumatic event; therefore the perception of a hectic hospital environment was unlikely attributable to the affective state at admission. While 17.6% of patients reached the cutoff for the dissociative symptom cluster, only 2% reached the cutoff for the cumulated score of the re-experiencing, avoidance, and arousal symptom clusters, with no participant fulfilling case criteria for a DSM-IV diagnosis of ASD. On average, the level of ASD symptoms was substantial (total ASD symptom score: 16.26±9.80, dissociative symptoms: 4.89±3.99, re-experiencing symptoms: 3.49±2.82, avoidance symptoms: 3.47±2.66, arousal symptoms: 4.40±3.60).

3.2 Perception of the hospital environment and total acute stress disorder symptoms

Table 2 shows the results of the regression model linking the perception of a hectic hospital environment with the sum score of ASD symptoms. The "hectic environment" group showed significantly higher ASD symptom levels than the "calm environment" group ($B = 6.149$, $r = 0.254$, $p = .013$), independent of the covariates age, gender, educational level, troponin T peak level, distress, previous MI, and history of depression (Figure 2). Patients' perception of a hectic hospital environment explained 6.5% of the variance in the ASD sum score indicating a

medium effect size. The only covariate that was also significantly associated with the total score of ASDS symptoms was distress (B = 0.923, r = 0.412, p = .000), whereby patients with higher peritraumatic distress showed elevated ASD symptom levels.

3.3 Perception of the hospital environment and acute stress disorder symptom clusters

Table 3 presents regression models linking the perception of a hectic hospital environment with the four individual ASD symptom clusters. All analyses were adjusted for demographic, peritraumatic, and medical covariates. Perceived hectic hospital environment was significantly associated with dissociative symptoms (B = 0.573, r = 0.211, p = .041), with higher values observed in the "hectic environment" compared with the "calm environment" group. Group differences with borderline statistical significance, although with small-to-medium effect sizes, were also found for symptoms of re-experiencing (B = 0.388, r = 0.184, p = .074) and arousal (B = 0.482, r = 0.179, p = .083). No statistical association was found for avoidance symptoms, although a small effect suggested clinical significance (B = 0.333, r = 0.140, p = .176). Figure 3 illustrates the group differences in ASDS scores across subscales. Regarding covariates, women had fewer dissociative symptoms than men (B = -0.671, r = -0.253, p = .014) and those with a history of depression had more re-experiencing symptoms than those without (B = 0.429, r = 0.222, p = 0.031). Peritraumatic distress was significantly and positively associated with all ASD symptom clusters (dissociative symptoms: B = 0.063, r = 0.264, p = .010, re-experiencing: B = 0.079, r = 0.401, p = .000, avoidance: B = 0.057, r = 0.267, p = .009, arousal: B = 0.064, r = 0.266, p = .009).

4 Discussion

We found significantly higher levels of ASD symptoms in patients who at admission perceived the hospital environment as hectic compared to patients who perceived it as calm. In the fully adjusted model, perceived hectic hospital environment explained over 6% of the variance of the ASDS sum score. This finding is in line with a previous study, in which crowding was found to be associated with posttraumatic stress one month after ACS [16]. To our knowledge, the novelty of our study is the measurement of crowding using subjective ratings of a hectic hospital environment. The finding is independent of the also retrospectively rated peritraumatic distress, and, therefore, unlikely attributable to the current mental state of study participants. Our results indicate that not only objective circumstances, although not measured here, but also the subjective perception of crowding may influence the development of post-MI stress. In addition, our data suggest that crowding, already early in the process of emergency care, affects ASD symptoms, which then might lead to subsequent PTSD. According to a previous study by Edmondson and colleagues [23], MI-patients with current or past depressive episodes developed more posttraumatic stress under crowding conditions than non-depressed MI patients. One might speculate that depressed patients subjectively appraise greater hecticness to objective crowding than do the non-depressed.

We additionally investigated whether the association of a perceived hectic hospital environment with the sum of ASD symptoms can also be observed for individual ASD symptom clusters. We found that the perception of a hectic hospital environment is significantly associated with higher levels of dissociative symptoms, and, with borderline statistical significance, also higher levels of re-experiencing and arousal symptoms. No significant association was found with avoidance. Nevertheless, small-to-medium effect sizes could be observed for all of these outcomes, suggesting clinically significant associations. An explanation for the non-significant effect observed with avoidance symptoms might be that

avoidance is likely influenced by several other factors, including the confrontation of caregivers and family members with health-related implications and impairments after MI. Another explanation might be the poor internal consistency of the avoidance subscale. As a relation of a perceived hectic hospital environment with ASD symptom clusters is a novel area of research, we did not state a priori assumptions on the direction of these relationships, so these post-hoc analyses are to be understood as exploratory. Nonetheless, these observations may inform further studies in the field of behavioral cardiology in an emergency setting.

Peritraumatic distress was highly associated with ASD symptoms, displayed also in each symptom cluster. This result is in accordance with previous studies, indicating that distress during the traumatic event may be a predictor for the development of traumatic stress [1, 11]. Except gender, which showed an association with dissociative symptoms, none of the further covariates were significantly and independently related to ASD symptoms. Previous studies showed a predictive value of sociodemographic factors for ASD in injured adolescents and parents of children with cancer, respectively [e.g. 9, 10]. One reason for the lack of replication of these observations might be that our sample consisted mainly of older men with an average level of education, thereby limiting interpretations to this specific population. As expected, troponin T peak level, an objective marker of MI severity, did not emerge as a significant covariate of ASD symptoms; this finding concurs with the literature [11, 12]. Also, a history of a prior MI was not significantly associated with ASD symptoms. There are studies suggesting that a previous MI increases the risk of posttraumatic stress [e.g., 30]. It might be that a previous MI increases the risk of PTSD, but not of ASD. Specific habituation effects to procedures and interventions in the clinical setting might differ between these two disorders. We replicated previous study findings, showing depression to be a predictor of ACS-triggered ASD [11, 23].

Crowding apparently denotes a complex phenomenon with many influencing factors and different outcomes [18]. An increasing body of literature has been addressing possible solutions for overcrowded emergency departments in hospitals to ameliorate adverse outcomes [19]. Our findings might provide novel insight for this clinical problem. Specifically, the findings of this study suggest that, besides political efforts aimed at reducing crowding, psychological support should also be directed at the individual patient in need. Patients with MI often feel helpless and in danger of losing control. The perception of a hectic hospital environment at admission could possibly increase these negative feelings. Therefore, it seems crucial to identify patients perceiving the hospital environment as hectic and offering them psychological support along with a safe environment. Future studies need to examine the feasibility of stress-reducing interventions through targeting the perception of hectic hospital environments in medical emergency settings. Moreover, further studies should focus on the comparison of subjective versus objective measurements of crowding in order to test how these interact in predicting mental health in acute MI patients. Future studies ought to also address the mechanisms linking the perception of a hectic hospital environment with ASD symptoms. Our findings do not support previous research in proposing that increased distress is an underlying process [23]. Whether this result originates from the specific type of assessment in our study, or refers to another mechanism, involved in the adaptation to a traumatic event, e.g. memory elaboration, needs to be further explored.

Our study has several limitations. Subjective perception of a hectic hospital environment at admission was assessed only retrospectively after patients had reached stable hemodynamic conditions. This might have led to a recall bias. Further, we did not collect data on objective crowding in the coronary care unit, which prevents a direct comparison with our subjective measure of a "hectic environment". „Hecticness" is a rather vague term and the question about a perceived "hectic environment" has not formally been validated; moreover, we are not aware of any gold standard measure for this purpose. Also, the meaning of the term "hectic"

might slightly differ in German from English. In our study, we tried to emphasize the environmental aspect of the term (i.e., “hectic environment”). Further, as our data show, medical factors, and, therefore, the urgency of care, seems not to be related to the term “hectic”. Due to the cross-sectional design of the study, causal inferences cannot be drawn. Thus, it could also be that patients who experienced more ASD symptoms had retrospectively perceived the hospital environment at admission as more hectic, although no difference in the level of peritraumatic distress could be found. A prospective observational study would be needed to reach clearer conclusions regarding a potentially bi-directional relationship. Moreover, due to the study design, we only included patients with a certain amount of perceived distress during MI, so this might have impacted on findings. In spite of all of our patients having perceived substantial distress during MI, only 16% of participants rated the hospital environment at admission as hectic. Previous research on crowding focused on emergency departments [16, 19, 21]. However, not all of our patients were admitted to the University Hospital, where this study was conducted, through the emergency department. The policy in the Swiss health care system is currently changing towards specialized centers, to which patients from surrounding hospitals are referred for specific acute cardiovascular interventions. This complicates an exact reconstruction of a patient’s route from symptom onset to the tertiary center and the various means of patient-centered care initiated along this route. Therefore, our results may not generalize to other acute health care settings. The generalizability is further limited by the small sample size and the specifics of the MI sample. The study was initiated before the release of the DSM-5 [4]. Whether our findings would hold when applying the new DSM-5 criteria for ASD needs further examination.

5 Conclusion

In sum, our study suggests that patients develop increased ASD symptom levels after acute MI if they perceive the hospital environment at admission as hectic versus calm, independent of demographic, peritraumatic, and medical factors. Our study provides a new perspective for the highly discussed and clinically important phenomenon of crowding, emphasizing the subjective experience of hospital admission as a relevant indicator of subsequent development of MI-triggered stress.

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Contributors

RvK, JPS, US, JB, and HZ designed the study. RM and MP supervised the data collection and collected data. RM, MP and RvK performed the statistical analysis. RM wrote the first draft of the manuscript. All authors critically revised and approved the final manuscript. RvK is the guarantor of the study.

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Conflicts of interest

None.

LITERATURE

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Figure 1. Participant flow with numbers and reasons for drop-out. ASDS = Acute Stress Disorder Scale.

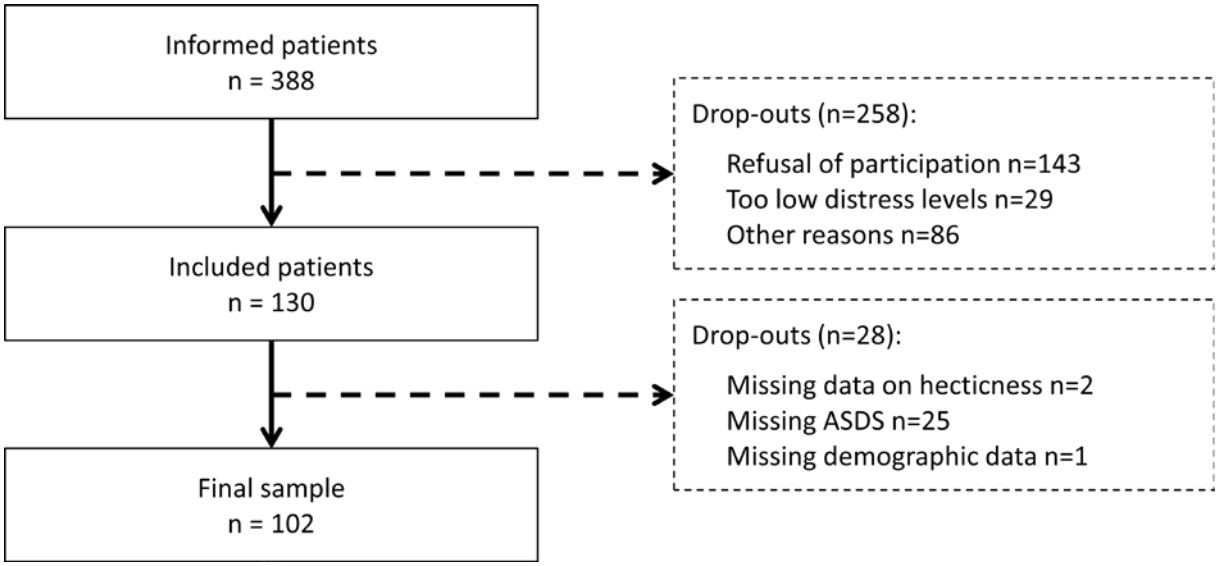

Figure 2. Significant difference in the mean ± SEM ASDS sum score between the groups "hectic environment" and "calm environment". ASDS = Acute Stress Disorder Scale.

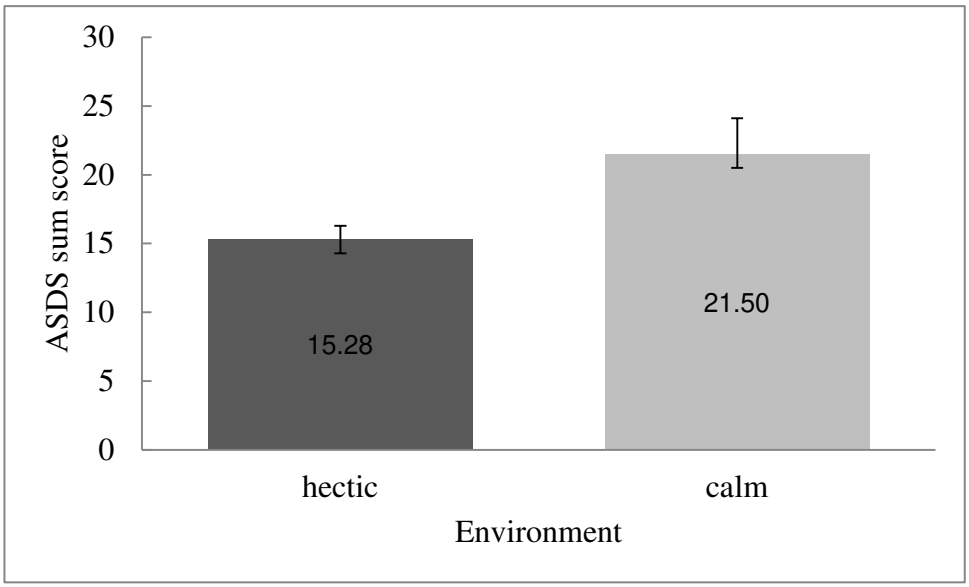

Figure 3. Significance in the mean ± SEM Acute Stress Disorder Subscale scores between the groups “hectic environment” and “calm environment”.

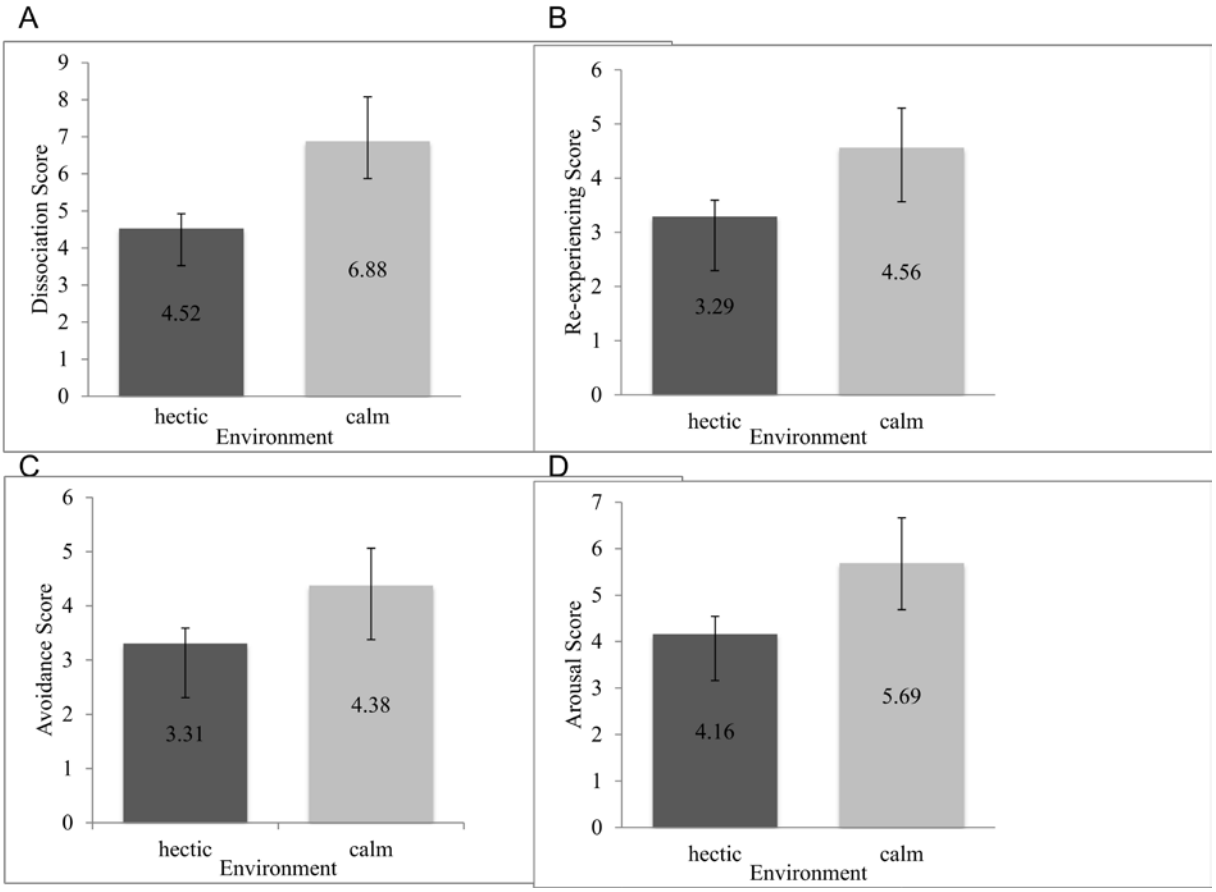

Table 1. Characteristics of all patients (N=102) and per hectic versus calm environment.

Variables	Total (N=102)	Calm environment (n=86)	Hectic environment (n=16)	p-value
Age (years)	59.4±10.3	59.4±10.1	59.3±11.5	.977
Male gender (%)	80.4	80.2	81.3	.925
Highest level of education (%)				.251
Primary school	9.8	10.5	6.3	
Vocational school	70.6	72.1	62.5	
College	3.9	2.3	12.5	
University	15.7	15.1	18.8	
Body Mass Index (kg/m^2)	27.8±5.0	28.0±5.2	27.2±3.8	.588
Smoking (%)	44.1	44.2	43.8	.974
Previous MI (%)	10.8	11.6	6.3	.524
Family history of coronary artery disease (%)	27.5	26.7	31.3	.711
History of depression (%)	20.6	20.9	18.8	.843
Myocardial infarction (%)				.968
STEMI	68.3	68.2	68.8	
Non-STEMI	31.7	31.8	31.3	
Number of diseased vessels (%)				.603
0 vessel	2.0	2.3	0.0	
1 vessel	37.3	39.5	25.0	
2 vessel	33.3	31.4	43.8	
3 vessel	27.5	26.7	31.3	

Killip classification (%)				.721
Killip I	85.3	83.7	93.8	
Killip II	9.8	10.5	6.3	
Killip III	1.0	1.2	0.0	
Killip IV	3.9	4.7	0.0	
Troponin T peak level (µg/l)	3.6±4.1	3.4±3.7	4.7±6.0	.269
LVEF (%)	49.2±12.0	49.4±11.7	48.4±13.9	.767
Distress	18.9±4.3	18.8±4.5	19.3±3.7	.664

Data are shown as mean±SD or percentage. CCU = coronary care unit; LVEF = left ventricular ejection fraction; MI = myocardial infarction; STEMI = ST-segment elevation myocardial infarction.

Table 2. Regression model for the sum score of the Acute Stress Disorder Scale

Variables entered	*B*	*β*	*p*	95% CI		*r*	R^2
				Lower Bound	Upper Bound		
							0.257
Age	0.03±0.09	0.031	.742	-0.149	0.209	0.034	
Gender	-4.04±2.35	-0.165	.088	-8.695	0.617	-0.176	
Educational level	-0.21±1.06	-0.018	.846	-2.305	1.892	-0.020	
Troponin T peak level	-0.17±0.23	-0.071	.454	-0.616	0.278	-0.078	
Distress	0.92±0.21	0.408	.000***	0.502	1.344	0.412	
Previous MI	1.82±2.91	0.058	.533	-3.953	7.588	0.065	
History of Depression	4.25±2.21	0.176	.057	-0.136	8.629	0.196	
Hectic Environment	6.15±2.43	0.229	.013*	1.332	10.966	0.254	

Data are shown as unstandardized B coefficients ± SEM. MI = Myocardial infarction.

Table 3. Regression models for the subscales of the Acute Stress Disorder Scale

Variables entered	*B*	*β*	*p*	95% CI		*r*	R^2
				Lower Bound	Upper Bound		
Dissociation Model							0.169
Age	0.01±0.01	0.065	.516	-0.014	0.027	0.068	
Gender	-0.67±0.27	-0.254	.014*	-1.200	-0.142	-0.253	
Educational level	0.03±0.12	0.022	.821	-0.211	0.266	0.023	
Troponin T peak level	-0.01±0.03	-0.040	.690	-0.061	0.041	-0.041	
Distress	0.06±0.02	0.262	.010*	0.016	0.111	0.264	
Previous MI	-0.05±0.33	-0.015	.875	-0.708	0.604	-0.016	
History of Depression	0.30±0.25	0.116	.234	-0.198	0.798	0.123	
Hectic Environment	0.57±0.28	0.199	.041*	0.025	1.120	0.211	
Re-experiencing Model							0.245
Age	0.00±0.01	0.015	.872	-0.015	0.017	0.017	
Gender	-0.06±0.21	-0.027	.778	-0.471	0.353	-0.029	
Educational level	0.03±0.09	0.027	.773	-0.159	0.213	0.030	
Troponin T peak level	-0.00±0.02	-0.003	.974	-0.040	0.039	-0.003	
Distress	0.08±0.02	0.399	.000***	0.042	0.116	0.401	
Previous MI	0.43±0.26	0.157	.096	-0.078	0.943	0.172	
History of Depression	0.43±0.20	0.203	.031*	0.041	0.817	0.222	
Hectic Environment	0.39±0.22	0.165	.074	-0.038	0.814	0.184	

Avoidance Model							0.114
Age	-0.01±0.01	-0.064	.540	-0.024	0.012	-0.064	
Gender	-0.04±0.24	-0.016	.875	-0.507	0.432	-0.016	
Educational level	-0.03±0.11	-0.029	.767	-0.243	0.180	-0.031	
Troponin T peak level	-0.02±0.02	-0.079	.442	-0.063	0.028	-0.080	
Distress	0.06±0.02	0.274	.009**	0.015	0.100	0.267	
Previous MI	0.48±0.29	0.166	.103	-0.100	1.063	0.168	
History of Depression	0.09±0.22	0.042	.673	-0.348	0.536	0.044	
Hectic Environment	0.33±0.25	0.135	.176	-0.152	0.819	0.140	
Arousal Model							0.128
Age	-0.00±0.01	-0.009	.931	-0.021	0.019	-0.009	
Gender	-0.25±0.27	-0.097	.350	-0.777	0.278	-0.097	
Educational level	0.02±0.12	0.013	.891	-0.221	0.254	0.014	
Troponin T peak level	-0.02±0.03	-0.072	.483	-0.069	0.033	-0.073	
Distress	0.06±0.02	0.270	.009**	0.016	0.111	0.266	
Previous MI	0.08±0.33	0.026	.799	-0.570	0.738	0.026	
History of Depression	0.34±0.25	0.135	.177	-0.156	0.837	0.140	
Hectic Environment	0.48±0.28	0.172	.083	-0.064	1.028	0.179	

Data are shown as unstandardized B coefficients ± SEM. MI = Myocardial infarction.